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Design and Implementation of the System of Computer Skills Training and Testing

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Abstract

The application of computer skills is the fundamental ones that college students should possess. How to train and test these skills are the primary tasks to be addressed, how to solve it in computer tech teaching. This paper aims to explore the application of the system in examination.

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1. Introduction

The application of computer skills is the fundamental ones that college students should possess. At present, computer skills are highly valued in all kinds of jobs. National Application Skill Test, Computer Level Test are specially designed to test the students' ability in computer science, which can greatly promote the candidates' computer skills and enlarge their computer knowledge, in order that more talents who specialize in their fields and master computer skills can be cultivated. However, How to train and test these skills are the primary tasks to be solved in computer tech teaching.

The application skills in computer include basic knowledge of computer, operating system, the use of word processing, spreadsheet, presentation production, the basic operation of the network modules. Among which Word, Excel, PowerPoint are the essential ones that students have to grasp. After tests, teachers have to open assignment files respectively and check answers personally the whole process is characterized by time-consuming as well as less objective. The exploitation of training and test system in computer application skills is in urgent need. On the one hand, the system can examine the computer skills of students, on the other hand, it can save the teachers from tiring work.

2. System analysis

Computer skills training and testing system consist of three functions, question given by teachers, question selected and answered by student, marking papers. The question given by teachers will

automatically join database of operating, which can covered all kind of knowledge points. These points can be categorized by Word Excel PowerPoint. The function of question selected and answered by student is that student can answer questions selected by computers at random, After finishing papers, students can upload and store papers. The function of marking paper is that computer can automatically mark papers, remind the mistakes made by students and give students marks, so that student can better understanding of their mistakes.

A. The analysis of given questions

The module of given questions is composed of two contents, operating questions category and operating questions answers.

1) Question classification

Question classification is summarized operate Word, Excel, PowerPoint knowledge point, Word is the word processing software, whose main function is to lay out documents and classify the following types, font setting; paragraph settings, page setup, operation table, photo-text, WordArt and graphics, header and footer, columns. Preceding all kinds of data and statistic analysis are the main functions of Excel, which can be divided into the following types of questions, namely, cell alignment, cell set formula, scheduling, charts, worksheets. PowerPoint is mainly used to create presentation, that is, the production of slides, whose main function is to effectively help lectures, teaching, product presentations. Questions concerning PowerPoint Test can be divided into animation, template, switch, comprehensive question quizzes.

2) Answers about operating

Answers about operating mainly in preparation for operation of automatic scoring, scoring major applications operating questions VBA implementation, using VBA technology, easily access to Word, Excel, PowerPoint documents in the various object properties.

Any Office document is an object, the paragraph in Word is Paragraph object, text is the object, the font is Font object. Word document Application object is the top word of the document object, which represents the Word application itself. Range and Selection objects to complete the document in the choice of the designated area in order to operate in the region. Document Object reference of a document. Words application object a word document. Font objects to set the text font format that contains the fonts of various properties, such as name, size, color and so on. Paragraph Format object: contains all the paragraph formats, such as alignment, indentation and other property, the answers to the generation that is the process of extracting the object properties.

Sum up the theme of all types of attributes, create the conditions for automatic grading.

B. Student-answer-question

Student-answer-question module consists of the authentication of students' identities, questions selected and answered by the student, paper-uploading. Student pump original document (Word, Excel, PowerPoint), so that the texts are different in content. After abstracting and regrouping of the questions (each type of question has to be chosen). A set of paper is completed in order that any student's paper is different from that of any other one. For insurance, the result of the paper is uploaded to the FTP server for backup automatically.

C. Test scoring

Test scoring function that the computer first reads the operation of the students taking action title question number to access the database operation to read the standard answer questions, and then open the students to document the students read the document object corresponding actual data, both comparing the process is the process of scoring.

3. Database Design

Computer skills training and testing system includes three functions, the question of teachers, students and answer questions pumping, marking papers. Teachers realize the difficulty out of question features the

design of item bank is operating, the operating title of the database design parts and word, excel, PowerPoint operation properties of the object to read. Students to answer difficult to realize these functions operate randomly selected from the database and the original title theme questions arithmetic operations. Automatic marking function to read the students realize the difficulty is the document object's properties, and database comparison the standard answer given approval in the report and answer scores.

The core functionality of the system is automatic marking, namely the use of VBA technology on office document automatic batch volume automatically approved by the above analysis that the real volume is to find various properties of Office objects are listed in the first paragraph of the document word "font" Object wrd.ActiveDocument.Paragraphs (1). Range.font various properties, such as Figure 1, Wrds the Word.Application object.

Font	
AllCaps	0
Animation	wdAnimationNone
Application	0
Bold	0
BoldBi	0
Borders	0
Color	wdColorYellow
ColorIndex	wdYellow
ColorIndexBi	wdYellow
Creator	1297307460
DiscretionaryColor	wdColorAutomatic
DisableCharacterSpaceGrid	False
DoubleStrikeThrough	0
Italic	-1
ItalicBi	0
Kerning	1
Name	""
NameAscii	"Times New Roman"
NameBi	"Times New Roman"
NameFarEast	"新宋体"
NameOther	"Times New Roman"

Figure 1 The Word.Application object

Clarify various properties of the object, the database can be designed to operate issues, the actual test system, database training, including many of the tables presented in this paper question the most important operating table, Table 1 for the title table data definition operations, operating problems

Table 1 Table definition of the operation

Field name	Date type	Field size	Is null or not
<i>the serial number of Operating</i>	<i>Int</i>	<i>4</i>	<i>no</i>
<i>Classification of operating</i>	<i>Char</i>	<i>2</i>	<i>yes</i>
<i>question classification of Operational problem</i>	<i>Char</i>	<i>2</i>	<i>yes</i>
<i>name of question</i>	<i>Varchar</i>	<i>800</i>	<i>yes</i>
<i>Answers of operating</i>	<i>Varchar</i>	<i>800</i>	<i>yes</i>

The answer to the connection string properties, each property with a separator "/" to separate. Table 2 lists the two records are as follows: 2 records for the word questions, respectively, font settings, set the type of paragraph.

Table 2 Two records listing in database

question	Answers of operating
Set text in paragraph 1, the New Roman font, bold, font color is blue, double solid underline, set the first word to subscript.	NameFarEast=新宋体/Bold=-1/Italic=0/Color=65535/Underline=3/Subscript=-1/
Set text in paragraph 1, the New Roman font, bold, font color is blue, double solid underline, set the first word to subscript.	Alignment=2/CharacterUnitLeftIndent=1/CharacterUnitRightIndent=1/CharacterUnitFirstLineIndent=2/LineSpacing=12/

4. Module designation

Database Design: including Word, Excel, PowerPoint design of various types of problems. Figure 2 The paragraph settings..Figure 3 The Font Setting Computer skills training and testing system has 20 modules of setting question, each module design principles are practical and flexible. Such as font settings module,

you can set the problem in font setting on a random combination, and you can choose a flexible curriculum needs. students answering and pumping module and auto scoring module.

Students answer extraction module to complete Word, Excel, PowerPoint original operating questions casual working to achieve an assignment uploading, marking the flexibility to choose when to the folder where the document marking, marking the report generated after the student answer, marking the score direct deposit to the database.



Figure 2 The paragraph settings.

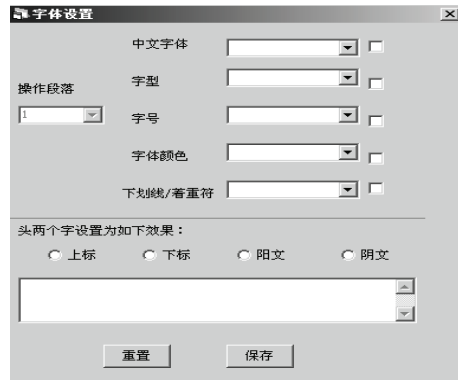


Figure 3 The Font Setting

5. Summary

Computer skills training and test system development for college students to provide computer skills training and test platform. The development of this system is using object-oriented design methods; system is facilitated, advanced, and scalable. The system is improving student computer skills.

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